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10/633,444	08/01/2003	Michael T. Roeder	200313908-1	4688

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EXAMINER	
YUEN, KAN	
ART UNIT	**PAPER NUMBER**
2616	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/633,444	ROEDER, MICHAEL T.	
	Examiner	Art Unit	
	Kan Yuen	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *08/01/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

Claim Objections

1. Claim 1-6 are objected to because of the following informalities:

In claim 1, line 5, the unit gateway is not shown in fig. 1. It is suggested the applicant to submit an additional drawing illustrating the gateway in the system. In addition to claim 1, line 5, the term a gateway seems to refer to the same term in lines 3-4, if this is true, it is suggested to change the term "a gateway", to "the gateway".

Claims 2-6 are objected to, because they are depending on claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 11, line 2, the term "the source IP address" has no antecedent basis.

Claim Rejections - 35 USC § 103

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3, 6, 7, 9, 13, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Datta et al. (Pat No.: 6493341), in view of Chung et al. (Pat No.: 6470389).

For claim 1, Datta et al. disclosed the method of receiving a packet at a router from a source host to be forwarded via a gateway to a destination host (see column 8, lines 25-30, and also see fig. 3, node 102, controller 308, and routers 110); In the drawing of the reference, the controller 308, can be interpreted as a router that receives packet from the node 102; applying an algorithm at the router to select a gateway for the source host for packets destined to the destination host (see column 8, lines 31-40, and see fig. 3); In the reference, the controller 308 performs an algorithm to select a router from a plurality of routers to transmit the packet. In this case, we can interpret the

controller 308 as the router to select a router 110 as the gateway to transmit the packet. However, Datta did not disclosed the method of sending an ICMP redirect message from the router to the source host to reset the gateway of the source host for packets destined to the destination host. Chung et al. from the same or similar fields of endeavor teaches the method of sending an ICMP redirect message from the router to the source host to reset the gateway of the source host for packets destined to the destination host (see column 8, lines 16-30, and see fig 4.). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Chung et al. in the network of Datta et al. The motivation for using the method as taught by Chung et al. in the network of Datta et al. being that it provides a way to bypass the dispatcher 64 and go directly to the end point.

Regarding to claim 3, Datta et al. disclosed the method of the algorithm selects the next default gateway using a round robin type selection process (see column 8, lines 31-40).

Regarding to claim 6, Datta et al. also disclosed the method of the algorithm is load based, and further comprising communicating load levels amongst the plurality of routers (see column 23, lines 21-37).

Regarding to claim 7, Datta et al. also disclosed the methods of a receiver configured to receive a packet from a source host to be forward to a destination host (see column 8, lines 25-30, and also see fig. 3, node 102, controller 308, and routers 110, and destination node 330); In the drawing of the reference, the controller 308, can be interpreted as a router that receives packet from the node 102; a selection module

configured to apply an algorithm to select a next gateway of the source host for packets destined to the destination host (see column 8, lines 31-40, and see fig. 3); In the reference, the controller 308 performs an algorithm to select a router from a plurality of routers to transmit the packet. In this case, we can interpret the controller 308 as the router to select a router 110 as the gateway to transmit the packet. However Datta et al. did not disclose the method of a transmission module configured to send an ICMP redirect message to the source host to reset a current gateway of the source host for packets destined to the destination host. Chung from the same or similar fields of endeavor teaches the method of a transmission module configured to send an ICMP redirect message to the source host to reset a current gateway of the source host for packets destined to the destination host (see column 8, lines 16-30). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Chung et al. in the network of Datta et al. The motivation for using the method as taught by Chung et al. in the network of Datta et al. being that it provides a way to bypass the dispatcher 64 and go directly to the end point.

Regarding to claim 9, Datta et al. also disclosed the method of the selection module applies a round-robin type algorithm to select the next gateway (see column 8, lines 31-40).

Regarding to claim 13, Datta et al. also disclosed the method of the apparatus is configured to communicate load levels to and receive load levels from other routing apparatus, and wherein the selection module applies a load-based algorithm (see column 23, lines 21-37).

Regarding to claim 15, Datta et al. also disclosed the method of the load-based algorithm comprises a weighted round robin algorithm (see column 8, lines 31-40).

4. Claims 2, 4, 5, 8, 10-12, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Datta et al. (Pat No.: 6493341), in view of Chung et al. (Pat No.: 6470389), as applied to claims 1 and 7 above, and further in view of Inoue et al. (Pub No.: 2003/0108052).

For claim 2, Datta et al. and Chung et al. disclosed all the subject matter of the claimed invention with the exception of the algorithm comprises a pseudo-random algorithm. However, Inoue et al. from the same or similar fields of endeavor teaches the method the algorithm comprises a pseudo-random algorithm (see paragraph 0021, lines 1-8). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Inoue et al. in the network of Datta et al. and Chung et al. The motivation for using the method as taught by Inoue et al. in the network of Datta et al. and Chung et al. being that it provides uniform distribution to the destination.

For claim 4, Datta et al. and Chung et al. also did not disclosed the method of algorithm comprises a hash function, wherein an output of the hash function returns an index of a router to be used to route subsequent packets with a same hash value. However, Inoue et al. from the same or similar fields of endeavor teaches the method of the algorithm comprises a hash function, wherein an output of the hash function returns

an index of a router to be used to route subsequent packets with a same hash value (see paragraph 0075, lines 1-5, 0076, lines 1-5, and see fig. 5 selecting module 47). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Inoue et al. in the network of Datta et al. and Chung et al. The motivation for using the method as taught by Inoue et al. in the network of Datta et al. and Chung et al. being that it provides uniform distribution to the destination.

For claim 5, Datta et al. and Chung et al. also did not disclosed the method of the hash function is a function of any combination of the IP addresses of the destination and source hosts of the packet. However, Inoue et al. also teaches the method of the hash function is a function of any combination of the IP addresses of the destination and source hosts of the packet (see paragraph 0074, lines 1-4). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Inoue et al. in the network of Datta et al. and Chung et al. The motivation for using the method as taught by Inoue et al. in the network of Datta et al. and Chung et al. being that it provides uniform distribution to the destination.

For claim 8, Datta et al. and Chung et al. also did not disclosed the method of the selection module comprises a pseudo-random number generator. However, Inoue et al. also teaches the method of the selection module comprises a pseudo-random number generator (see paragraph 0021, lines 1-8). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Inoue et al. in the network of Datta et al. and Chung et al. The motivation for

using the method as taught by Inoue et al. in the network of Datta et al. and Chung et al. being that it provides uniform distribution to the destination.

For claim 10, Datta et al. and Chung et al. also did not disclosed the method of the selection module applies a hash function. However, Inoue et al. also teaches the method of the selection module applies a hash function (see paragraph 0075, lines 1-5, 0076, lines 1-5, and see fig. 5 selecting module 47). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Inoue et al. in the network of Datta et al. and Chung et al. The motivation for using the method as taught by Inoue et al. in the network of Datta et al. and Chung et al. being that it avoids each of the server load balancers from becoming a bottleneck to a destination.

For claim 11, Datta et al. and Chung et al. also did not disclosed the method of the hash function is a function of the source IP address. However, Inoue et al. also teaches the method of the hash function is a function of the source IP address (see paragraph 0074, lines 1-4). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Inoue et al. in the network of Datta et al. and Chung et al. The motivation for using the method as taught by Inoue et al. in the network of Datta et al. and Chung et al. being that it avoids each of the server load balancers from becoming a bottleneck to a destination.

For claim 12, Datta et al. and Chung et al. also did not disclosed the method of the hash function is a function of a combination of the source and destination IP addresses. However, Inoue et al. also teaches the method of the hash function is a

function of a combination of the source and destination IP addresses (see paragraph 0074, lines 1-4). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Inoue et al. in the network of Datta et al. and Chung et al. The motivation for using the method as taught by Inoue et al. in the network of Datta et al. and Chung et al. being that it avoids each of the server load balancers from becoming a bottleneck to a destination.

For claim 16, Datta et al. and Chung et al. also did not disclosed the method of the load-based algorithm comprises a pseudo-random algorithm. However, Inoue et al. also teaches the method of the load-based algorithm comprises a pseudo-random algorithm (see paragraph 0021, lines 1-8). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Inoue et al. in the network of Datta et al. and Chung et al. The motivation for using the method as taught by Inoue et al. in the network of Datta et al. and Chung et al. being that it avoids each of the server load balancers from becoming a bottleneck to a destination.

5. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Datta et al. (Pat No.: 6493341), in view of Chung et al. (Pat No.: 6470389), as applied to claim 13 above, and further in view of Lamberton et al. (Pat No.: 7003581).

For claim 14, Datta et al. and Chung et al. disclosed all the subject matter of the claimed invention with the exception of the load-based algorithm comprises a weighted

hash algorithm. However, Lamberton et al. from the same or similar fields of endeavor teaches the method of the load-based algorithm comprises a weighted hash algorithm (see column 5, lines 14-36). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Lamberton et al. in the network of Datta et al. and Chung et al. The motivation for using the method as taught by Lamberton et al. in the network of Datta et al. and Chung et al. being that it provides a data transmission system including an IP network wherein the IP host can select directly the router with high availability.

6. Claims 17-19, 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. (Pub No.: 2003/0108052), in view of Datta et al. (Pat No.: 6493341).

For claim 17, Inoue et al. disclosed the methods of receiving an address resolution protocol (ARP) request at the plurality of routers from a requesting host from a source IP address in relation to a destination IP address (see paragraph 0102, lines 1-5, see paragraph 0103, lines 1-9, see paragraph 0106, lines 1-5, and see fig. 3. client terminal 3, router 4, and server load balancers #1, #2, #3). In the reference, we are told that the terminal 3 sends an ARP request message to the router specifying an IP address of the destination, and the router forward the request to the server balancers #1, #2, and #3, as in this case it can be interpreted as plurality of routers. Inoue also teach the method of sending an ARP reply from the responding router to the requesting host (see paragraph 0104, lines 1-9, and see paragraph 0118, lines 1-5, and see fig. 3.

client terminal 3, router 4, and server load balancers #1, #2, #3). The client terminals request an ARP message by sending the first packet to the router, and the router modified the first packet and sent out the second packet to the server balancers. Among the balancers, the balancer #1 transmit a third packet assembled by padding, to the data field of the second packet received to the router, and lastly the fourth packet is forwarded from the router 4 back to the terminal 3. However Inoue et al. did not show plurality of routers. Datta et al. from the same or similar fields of endeavor teaches the use of applying an algorithm at each router to determine which single router is to respond to the request (see column 8, lines 31-40, and see fig. 3). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Datta et al. in the network of Inoue et al. The motivation for using the method as taught by Datta et al. in the network of Inoue et al. being that it provides compatibility with a wide variety of existing line technologies and routers.

Regarding to claim 18, Inoue et al. also disclosed the method of forwarding a packet from the source IP address to the destination IP address (see paragraph 0102, lines 1-5).

Regarding to claim 19, Inoue et al. also disclosed the method of a hash function (see paragraph 0075, lines 1-5).

Regarding to claim 21, Inoue et al. disclosed all the subject matter of the claimed invention with the exception of the algorithm determines the responding router using a round robin type selection process. Datta et al. also disclosed the method of the algorithm determines the responding router using a round robin type selection process

(see column 8, lines 31-40). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Datta et al. in the network of Inoue et al. The motivation for using the method as taught by Datta et al. in the network of Inoue et al. being that it provides multiple links between two or more sites, providing greater bandwidth by combining individual routers.

Regarding to claim 22, Inoue et al. disclosed all the subject matter of the claimed invention with the exception of the algorithm is load based, and further comprising communicating load levels amongst the plurality of routers. Datta et al. also disclosed the method of the algorithm is load based, and further comprising communicating load levels amongst the plurality of routers (see column 23, lines 21-37). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Datta et al. in the network of Inoue et al. The motivation for using the method as taught by Datta et al. in the network of Inoue et al. being that it provides multiple links between two or more sites, providing greater bandwidth by combining individual routers.

Regarding to claim 23, Inoue et al. disclosed the method of the system comprising: means for receiving an address resolution protocol (ARP) request at the plurality of routers from a requesting host from a source IP address in relation to a destination IP address (see paragraph 0102, lines 1-5, see paragraph 0103, lines 1-9, and see fig. 3. client terminal 3, router 4, and server load balancers #1, #2, #3). In the drawing, we can see that the terminal 3 sends an ARP request message to the router specifying an IP address of the destination, and the router forward the request to the

server balancers #1, #2, and #3, as in this case it can be interpreted as plurality of routers; and means for sending an ARP reply from the responding router to the requesting host (see paragraph 0104, lines 1-9, and see paragraph 0118, lines 1-5, and see fig. 3. client terminal 3, router 4, and server load balancers #1, #2, #3). However, Inoue et al. did not show plurality of routers. Datta et al. also disclosed the method of means for applying an algorithm at each router to determine which single router is to respond to the request (see column 8, lines 31-40, and see fig. 3); Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Datta et al. in the network of Inoue et al. The motivation for using the method as taught by Datta et al. in the network of Inoue et al. being that it provides multiple links between two or more sites, providing greater bandwidth by combining individual routers.

7. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. (Pub No.: 2003/0108052), in view of Datta et al. (Pat No.: 6493341), as applied to claim 19 above, and further in view the Background of Blair (Pat No.: 6778495).

For claim 20, Inoue et al. and Datta et al. disclosed all the subject matter of the claimed invention with the exception of the hash function is a function of the source and destination IP addresses. Blair from the same or similar fields of endeavor teaches the method of the hash function is a function of the source and destination IP addresses (column 2, lines 5-11). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Blair in the

network of Inoue et al. and Datta et al. The motivation for using the method as taught by Blair in the network of Inoue et al. and Datta et al. being that it provides multiple links between two or more sites, providing no requirements to add a sequence header or rearrange packets to compensate for different transit times over different links.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lingafelt et al. (Pat No.: 7099341), Mclaggan et al. (Pub No.: 2005/0025179), Amdahl et al. (Pat No.: 7102996), and Ahuja et al. (Pat No.: 6981055), are show systems which considered to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kan Yuen whose telephone number is 571-270-2413. The examiner can normally be reached on Monday-Friday 10:00a.m-3:00p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky O. Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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